Work Session

Agenda Item #	10B
Meeting Date	July 18, 2005
Prepared By	Barbara B. Matthews
Approved By	

Discussion Item	Discussion regarding recommendations of Community Center Liaison Committee
Background	On July 12, 2005, the Community Center Liaison Committee voted to request that the City Council undertake two studies related to the possible construction of a gymnasium. The first request is to conduct two additional borings in the proposed location of the gymnasium to better evaluate soil conditions in the area. The second request is professional assistance in locating the electrical duct bank underneath Grant Avenue next to the police parking lot. Committee Chair Howard Kohn will be in attendance at the work session to provide additional information and to respond to any questions concerning the Committee's request.
Policy	The City Council will consider the request of the Community Center Liaison Committee and determine how to proceed.
Fiscal Impact	Will depend on scope of service to be performed
Attachments	Proposal for subsurface exploration and geotechnical engineering services dated June 28, 2005 from ECS Mid-Atlantic, LLC Subsurface utility engineering proposal dated July 7, 2005 from So-Deep, Inc.
Recommendation	For Discussion Only
Special Consideration	

PROPOSAL FOR
SUBSURFACE EXPLORATION
AND GEOTECHNICAL ENGINEERING ANALYSIS

TAKOMA PARK MUNICIPAL CENTER BUILDING GYMNASIUM ADDITION
CITY OF TAKOMA PARK, MARYLAND

ECS PROPOSAL NO. 22925–GP

FOR

CITY OF TAKOMA PARK

JUNE 28, 2005

ECS MID-ATLANTIC, LLC
Geotechnical • Construction Materials • Environmental • Facilities

June 28, 2005

Mr. Marc Elrich
Council Member
City of Takoma Park
Takoma Park Municipal Center Building
7500 Maple Avenue
Takoma Park, Maryland 20192

ECS Proposal No. 22925-GP

Reference: Proposal for Subsurface Exploration and Geotechnical Engineering Services, Takoma Park Municipal Center Building Gym Addition, City of Takoma Park, Montgomery County, Maryland

Dear Mr. Elrich:

As requested, ECS Mid-Atlantic, LLC (ECS) is pleased to present the following unit price and estimated total cost proposal for providing subsurface exploration and geotechnical engineering services for the proposed project. In preparing this proposal, we have discussed the project with you and have reviewed a previous geotechnical report prepared for recent Takoma Park Municipal Center Building project (reference ECS Project No. 8214, report dated September 30, 2002).

Project Description

The project will consist of the design and construction of a one-story gymnasium addition to the existing Takoma Park Municipal Center Building located at 7500 Maple Avenue in Takoma Park, Montgomery County, Maryland. We understand that the proposed addition will have approximate dimensions of 60 feet by 100 feet. For proposal scoping purposes, we have assumed maximum column and wall loads of 100 kips and four kips per linear foot.

ECS previously prepared a geotechnical report for an addition to the Takoma Park Municipal Center Building that was recently constructed. For this exploration, two borings (B-11 and B-12 were drilled within or near the proposed gymnasium and encountered refusal at depths of 13 and 17 feet. We understand that substantial additional earthwork and foundation costs were incurred during construction of this addition due to the presence of old fill soils and groundwater conditions.

In order to evaluate the subsurface conditions within limits of the proposed development, a series of soil borings will be performed. The scope of services proposed for this subsurface exploration and geotechnical engineering analysis is given in the following section.

Scope of Services

If you concur, we propose to perform a total of two borings within the proposed gym footprint to supplement the previous two borings that were drilled by ECS. The borings will be extended to plan depths on the order of 20 feet below the existing ground surface; however, the results of previous borings indicate that refusal will be encountered at depths less than 20 feet. Please note that a minimum charge of 10 feet will apply to each boring terminated at a depth less than 10 feet. Upon completion of drilling operations, the samples will be returned to our laboratory in Chantilly, Virginia for further identification and testing, followed by the preparation of a written engineering report.

Our integrated services will include drilling of soil borings by drill crews under our direct supervision, laboratory testing of representative soil samples for pertinent engineering properties, and preparation of an engineering report. The engineering report will include the following items:

a. Information on site conditions including surface drainage, geologic information and special site features.

b. Description of the field exploration and laboratory tests performed.

c. Final logs of the soil borings and records of the field exploration in accordance with the standard practice of geotechnical engineers. A site location plan will be included, and the results of the laboratory tests will be plotted on the final boring logs or included on a separate test report sheet.

d. Recommendations for allowable soil bearing pressure for conventional spread footing foundations and estimates of predicted foundation settlement. This will include specific project information and design loads provided by your office and/or the structural engineer.

e. Evaluation of the on-site soil characteristics encountered in the soil borings. Specifically, we will discuss the suitability of the on-site materials for reuse as engineered fill to support ground slabs and pavements. We will also include compaction requirements and suitable material guidelines.

f. Measurement of the topsoil or pavement thickness at each boring location and notation of this information on the boring logs and in the text of the report.

g. Recommendations for seismic site classification in accordance with the International Building Code (IBC 2000). This analysis will be based on the Standard Penetration Test (SPT) method described in Section 16.15.1.5 in IBC 2000. We will also provide recommendations for additional testing or analysis considered necessary or warranted in

order to "better" the seismic site classification, if determined necessary by the structural engineer.

h. As requested, we will provide additional consultation and engineering analysis for you on other problems related to development of the site and subsurface conditions at the unit rates outlined in this proposal.

Optional Seismic Site Classification Testing

The current International Building Code (IBC 2000) governing the building's design has a requirement that the geotechnical engineer render an opinion on the Seismic Site Class Definition (reference section 1615.1.1). The Site Class can be assessed by the geotechnical engineer through the interpretation of conventional soil boring data; however, this approach often results in a conservative Site Class definition. A conservative or "soft soil profile" Site Class definition can add significant costs to the building's structural elements.

As an optional service, ECS can perform field seismic shear wave velocity measurements utilizing geophysical testing equipment. Oftentimes, these geophysical tests yield a more representative and perhaps better Site Class definition than would be realized using only conventional soil boring data. ECS would measure the shear wave velocity of the soils and rock at the site using the Refraction Microtremor (ReMi) method to a depth exceeding 100 feet. The data would be processed using SeisOpt® ReMi™ software to reveal a one-dimensional average shear-wave (S-wave) structure at each line considered. The Site Class Definition would then be determined. These seismic site testing services are offered for a lump sum fee of $3,500. If you would like ECS to perform these optional services, please indicate so on the attached Proposal Acceptance Sheet.

Cost Estimate

The estimated cost associated with the scope of services identified above is as follows:

		QTY.	TOTAL UNIT		UNIT RATE		COST
	Field Exploration:						
9004	Boring Layout	5	hours		$100.00	/crew hr.	$500.00
9006	Drill Rig Mobilization (ATV)	1	lump sum		$575.00	each	$575.00
9009	Drill Rig Coordination, Access, Cleanup and Utility Clearance	2	hours		$135.00	/crew hr.	$270.00
1520	Drilling/Utility Coordination	2	hours		$100.00	/ hr.	$200.00
9013	Private Utility Locator	1	lump sum		$400.00	each	$400.00
9020	Drilling Borings (0'-40')	2	borings	20 lf. each	$12.00	/lf.	$480.00

		QTY.		TOTAL UNIT	UNIT RATE		COST
9024	Hard Drilling Surcharge	5	feet		$5.00	/lf.	$25.00
9015	Patching Materials	2	borings		$35.00	/boring	$70.00
9062	Temporary Piezometer Installation	1	borings	20 tlf	$9.50	/lf.	$190.00
				Field Exploration Subtotal:			**$2,710.00**
	Laboratory Testing:						
4000	Visual Classifications	14	samples		$4.50	/sample	$63.00
4100	Moisture Content Tests	10	tests		$8.00	/test	$80.00
4300	Atterberg Limits Tests	1	tests		$70.00	/test	$70.00
4450	Gradation Analysis, washed sieve	1	tests		$70.00	/test	$70.00
				Laboratory Testing Subtotal:			**$283.00**
	Engineering Services:						
1920	Engineering, Drafting and Secretarial services necessary for report preparation	1	lump sum		$2,000.00	each	$2,000.00
				Engineering Services Subtotal:			**$2,000.00**
				ESTIMATED TOTAL COST:			**$4,993.00**
	Optional Engineering Services:						
7000	Seismic Site Class Determination by Geophysical Measurements (ReMi Seisop) - IBC 2000 Building Code requirement				lump sum		$4,000.00

Schedule

We are prepared to mobilize onto the site within one to two weeks after authorization to proceed. We anticipate that drilling operations will require about one day, and that laboratory testing, after drilling is completed, will require about five days. Therefore, for time budget purposes, the entire scope should take about three to four weeks from initial authorization through final report submission.

Utility Clearance and Site Restoration

We will contact Miss Utility to locate underground utilities at the site; however, our experience indicates that Miss Utility will normally not locate private utilities. Because of the proximity of the existing Takoma Park Municipal Center Building, we have included the services of a private utility locator.

We will backfill each of the borings with the excavated soil. In pavement areas, we will patch the asphalt surface with a cold mix asphalt patch of an equivalent or greater thickness of asphalt. In grassy areas, the excess spoils will be mounded over the excavation; however, no other restoration will be provided. Please note that some disturbance to the ground surface, including the possible cutting of trees, will occur. We will attempt to minimize such disturbance; however, we have not budgeted for full restoration of the site including filling of tire ruts, seeding of lawn areas, or the planting of trees. If necessary, additional site restoration can be provided at an additional cost.

Closing

If other items are required because of unexpected field conditions encountered in our field exploration program, or because of a request for additional services, they would be invoiced in accordance with our current Fee Schedule. Before modifying or expanding the extent of our exploration program, you would be informed of our intentions for both your review and authorization.

Attached to this letter, and an integral part of our proposal, are our "Terms and Conditions of Service". These conditions represent the current recommendations of the ASFE Professional Firms Practicing in the GeoSciences, the Consulting Engineers' Council, and the Geo-Institute of the American Society of Civil Engineers.

Our insurance carrier requires that we receive written authorization prior to initiation of work, and a signed contract prior to the release of any work product. This letter is the agreement for our services. Your acceptance of this proposal may be indicated by signing and returning the enclosed copy to us. We are pleased to have this opportunity to offer our services and look forward to working with you on the project.

Respectfully,

ECS MID-ATLANTIC, LLC

Bryan C. Layman
Principal Engineer

for Manoli P. Andonyadis, P.E.
Senior Principal Engineer

Enclosures: Proposal Acceptance
Terms and Conditions of Service

[BCL/cwm /I:\Geotechnical\{eProposals}\22901-23000\01-22925-GP\a-Working\22925-GP.doc]

SO-DEEP ® Inc.

The Subsurface Utility Engineering Company

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and field offices in:
Peoria, IL
Charlotte, NC
Bend, OR

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July 7, 2005

Mr. Marc Elrich
Councilman
City of Takoma Park, MD
8001 Sligo Park Parkway
Takoma Park, MD 20912

Re: Takoma Park Municipal Center Gym; Takoma Park, MD
Subsurface Utility Engineering Proposal

Dear Mr. Elrich:

This letter and its attachments constitute our short-form contract for providing subsurface utility engineering services per your request recieved on June 29, 2005.

"Quality Level B" utility data, also known as Designating, are horizontal representations of the positions of underground utilities. These representations are obtained by applying appropriate surface geophysical methods within the project limits in order to image and mark existing utilities. The marked utility is then measured and documented in accordance with the standard of care of the subsurface utility engineering profession **(see attached Scope of Work section).**

"Quality Level B" utility data provides horizontal design basis information for engineering, construction, maintenance, remediation, and related efforts. Typically, this data is requested within the project limits early in the preliminary design so that prudent design decisions regarding the placement of structures, cut/fill limits, and so forth can be made to avoid conflicts with existing utilities. This data should not be used for design basis vertical information, nor where exacting horizontal tolerances are expected. "Quality Level A" utility data is necessary for this function.

So-Deep will designate, survey and map the approximate horizontal location of existing underground utilities at the City of Takoma Park Municipal Center within the "Area of Concern" as shown on the provided set of plan sheets **(see Attachment "A")**.

City of Takoma Park agrees to provide appropriate horizontal survey control and an electronic file (AutoCAD or MicroStation), so that we may return our designating as a reference file.

Please review the Contractual Information and Cost Estimate sections of the attachments and, if they are acceptable, sign and return this proposal to us so that we can schedule your work.

If you have any questions about any information contained herein, please call us.

Sincerely,

Mark L. Goldman

Mark L. Goldman
Project Manager

SUBSURFACE UTILITY ENGINEERING

Subsurface Utility Engineering:
"A branch of engineering practice that involves managing certain risks associated with: utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to certain parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design."
["Standard Guideline For the Collection and Depiction of Existing Subsurface Utility Data", C/I ASCE 38-02]

UTILITY QUALITY LEVEL: A professional opinion of the quality and reliability of utility information. Such reliability is determined by the means and methods of the professional. Each of the four existing utility data quality levels is established by different methods of data collection and interpretation.

So-Deep, Inc. offers complete subsurface utility engineering services. The most common components are defined as follows:

UTILITY QUALITY LEVEL A: Precise horizontal and vertical location of utilities obtained by the actual exposure (or verification of previously exposed and surveyed utilities) and subsequent measurement of subsurface utilities, usually at a specific point. Minimally intrusive excavation equipment is typically used to minimize the potential for utility damage. A precise horizontal and vertical location as well as other utility attributes are shown on plan documents. Accuracy is typically set at 15mm vertical, and to applicable horizontal survey and mapping accuracy as defined or expected by the project owner.

UTILITY QUALITY LEVEL B: Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. QL B data should be reproducible by surface geophysics at any point of their depiction. This information is surveyed to applicable tolerances defined by the project and reduced onto plan documents.

UTILITY QUALITY LEVEL C: Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to QL D information.

UTILITY QUALITY LEVEL D: Information derived from existing records or oral recollections.

SCOPE OF WORK: "QUALITY LEVEL B" DESIGNATING

DESIGNATING SERVICES (HORIZONTAL TWO-DIMENSIONAL MAPPING) - QL "B"
"Designating" is the process of using non-intrusive geophysical means to indicate the presence and approximate horizontal location of subsurface utilities. In performing designating services hereunder, So-Deep shall:

1. Provide all equipment, personnel and supplies required to perform designating services. So-Deep shall determine which equipment, personnel and supplies are required to perform designating services.

2. Conduct appropriate records research, investigate site conditions and identify applicable project limits.

3. Obtain necessary permits from city, county or other municipal jurisdictions to allow So-Deep to work in the existing streets, roads or rights-of-way.

4. Designate existing utilities and their major laterals within project limits utilizing appropriate radio frequency electromagnetic, magnetic, and acoustic emission techniques. Unless expressly requested, utilities designated will not include a) storm sewers, b) non-accessible empty conduits or empty utilities, c) vault or manhole limits or dimensions, d) irrigation, fountain, or sprinkler systems, or e) underground storage tanks. If required, we will gladly negotiate the designation of these facilities on a case-by-case basis.

5. Other surface geophysical methods, such as terrain conductivity, point to source transmitters, thermal, and ground penetrating radar can be used, as appropriate. These techniques, although typically involving extra expense, can further refine the utility model. Generally, these extra refinements are not cost effective, and So-Deep will not apply these techniques without authorization of the client. However, So-Deep can recommend appropriate techniques on a case-by-case basis.

6. Prepare appropriate field sketches of marked utilities, and survey designating marks, which shall be referenced to project control provided by the client.

7. Plot survey information onto base plans provided by the client using So-Deep's Computer Aided Drafting and Design ("CADD") systems.

8. Compare survey information plotted on base plans with information provided from field sketches and evaluate all plotted information in the field for accuracy and reliability.

9. Final plot all information onto the client's base plans to account for any corrections noted from the previous step and review plan sheets against a) records, b) field sketches, c) CADD drafting, and d) field notes. Discrepancies with records may be resolved through depiction of utilities at "Quality Level C or D".

10. If applicable, translate survey data and drafting codes to an electronic file to allow direct incorporation into the client's design file.

11. Final review and stamp appropriate deliverables by an appropriately registered staff professional in responsible charge.

12. Return final work product to the client and review project with the same.

13. With respect to the above services, So-Deep, Inc. and the client will work together to accomplish peripheral tasks necessary to accomplish the work, such as assistance in obtaining records, notifications to and access from property owners, etc.

14. The accuracy of subsurface data can be influenced by factors beyond our control, such as conductivity of materials and their surroundings, moisture, proximity of other underground utilities or structures, depth, etc. Therefore, only the accuracy of data obtained by actual physical verification (through vacuum excavation or otherwise) can be guaranteed to applicable surveying and/or engineering standards. However, So-Deep does carry professional liability insurance to cover negligent errors or omissions of our work product as related to the standard of care prevalent in the subsurface utility engineering profession, including application and interpretation of surface geophysical methods, survey and mapping. Markings placed on the ground by So-Deep, Inc. are not to be used for excavation purposes. The use of information provided by So-Deep, Inc. does not relieve any contractor from the duty to comply with applicable utility damage prevention laws and regulations, including but not limited to, giving notifications to utility owners or "one-call" centers, if any, before excavation.

15. So-Deep will provide all services to the prevailing standard of care applicable in the subsurface utility engineering profession.

CONTRACTUAL INFORMATION

The foregoing proposal has been prepared to offer you quality services at competitive prices. We have taken into consideration our normal administrative costs. However, if significant revisions or substitutions to the proposal are suggested which require additional involvement by our contracts or legal departments, then we reserve the right to adjust the price(s) set forth in the proposal. Furthermore, consideration of such revisions or substitutions may delay our mobilization and start of the work.

The accuracy of subsurface data can be influenced by factors beyond our control, such as conductivity of materials and their surroundings, moisture, proximity of other underground utilities or structures, depth, etc. Indeed there are utilities that cannot be detected given the current state of technologies. We warrant that we will provide our service in accordance with the standard of care for subsurface utility engineering at the time and place the services are provided. No other warrantees are implied or expressed. Therefore, only the accuracy of subsurface utility data that is obtained by actual physical verification (through vacuum excavation or otherwise) and shown on So-Deep's certification forms can be guaranteed to applicable surveying/engineering standards. The use of information provided by So-Deep, Inc. does not relieve any contractor from the duty to comply with applicable utility damage prevention laws and regulations.

So-Deep, Inc. will exert its best efforts to overcome unforeseen contingencies, but all commitments are subject to weather or other conditions reasonably beyond our control.

Payment for work performed is due within thirty (30) days of receipt of our invoice. Unless otherwise agreed, a one-and-one-half percent (1½%) per month service charge will apply to past due payments and So-Deep will be entitled to court costs and reasonable attorneys' fees if collection proceedings are necessary. If the work is canceled prior to completion, So-Deep will be paid for the percentage of the work completed prior to the notice of cancellation, plus any costs incurred in preparing to provide the service.

Prices quoted are good for thirty (30) days.

COST ESTIMATE

I. **Quality Level "B" - Designating Services**
Estimated Project Costs

A. Designating, Survey and Mapping Estimated Cost.	
Fifteen (15) two-man crew-hours @ $150.00 per crew hour (Portal-to-portal)	$ 2,250.00
Five (5) CADD/Quality Assurance man hours @ $ 88.00 per hour	$ 440.00
Two (2) Professional Engineer/Surveyor hours @ $ 125.00 per hour	$ 250.00
B. Records Research/Project Administration	
Six (6) man hours @ $ 95.00 per hour	$ 570.00
TOTAL ESTIMATED QUALITY LEVEL "B" COST	**$ 3,510.00**

Please understand that this is an **estimate** based upon **limited** available information. **You will be billed only for the actual hours worked on this project. We will not exceed this estimate by more than 10% without notification and your express approval.** If this proposal is accepted, we will utilize only properly trained and qualified personnel to provide services. We will employ appropriate techniques and methods to obtain and provide the data and specified information. All services will be completed in a timely and workmanlike manner, and in accordance with applicable professional standards. Any services outside the Scope of Work that may add costs will be performed only with your prior approval.

AUTHORIZATION FOR SERVICES

We trust that the foregoing is responsive to your request for proposal and that the terms and conditions defined herein meet with your satisfaction. If so, please sign and return this proposal to So-Deep, Inc. If not, please contact the undersigned to discuss any changes that may be desired.

SO-DEEP, INC. Mark L. Goldman July 7, 2005

Mark L. Goldman
Project Manager

Date

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to proceed with the work as specified. Payment will be made as outlined above.

ACCEPTED _____ _____

Signature
City of Takoma Park, MD

Date

ATTACHMENT "A"